



## Green IT

### SimpliVity OmniCube: Green IT for the Software-Defined Data Center

*“Most data centers, by design, consume vast amounts of energy in an incongruously wasteful manner, interviews and documents show. Online companies typically run their facilities at maximum capacity around the clock, whatever the demand. As a result, data centers can waste 90 percent or more of the electricity they pull off the grid.”<sup>1</sup>*  
~ **The New York Times**

SimpliVity's OmniCube is the industry's first and only globally federated and hyperconverged infrastructure solution. Designed and optimized for the VM environment, OmniCube is a 2U rack-mounted building block that converges 8-12 formerly separate and disparate technologies.

The SimpliVity hyperconverged platform offers significant cost savings in both CAPEX and OPEX including a substantial reduction in power and cooling usage, meaning SimpliVity is the environmentally friendly, Green IT solution for your data center.

## What is Green IT?

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With global climate change and rising utility costs becoming more and more of an issue in today's energy-starved world, efforts to produce innovative technologies that have less of an environmental footprint is a growing, and necessary, concern.

According to a year-long study conducted by the New York Times,

- “Worldwide, the digital warehouses use about 30 billion watts of electricity, roughly equivalent to the output of 30 nuclear power plants.”
- “On average, [data centers] were using only 6 percent to 12 percent of the electricity powering their servers to perform computations. The rest was essentially used to keep servers idling and ready in case of a surge in activity that could slow or crash their operations.”
- “In a typical data center...the energy wasted is as much as 30 times the amount of electricity used to carry out the basic purpose of the data center.”<sup>2</sup>

CGI, a leader in IT services, says, “Green IT is the study and practice of using computing resources in ways that help reduce energy and operating costs, enable sustainable business practices, and reduce the environmental impact of IT practices in the larger community.”<sup>3</sup>

With this in mind, the most pressing issues associated with “going green” are:

- Rising energy demands with more limited supplies and increasing utility costs.
- Management of electronic equipment disposal (e-waste).

<sup>1</sup> <http://www.nytimes.com/2012/09/23/technology/data-centers-waste-vast-amounts-of-energy-belying-industry-image.html?pagewanted=all& r=1&>

<sup>2</sup> <http://www.nytimes.com/2012/09/23/technology/data-centers-waste-vast-amounts-of-energy-belying-industry-image.html?pagewanted=all& r=1&>

<sup>3</sup> CGI. “Emerging Trends in Green IT.” 2010. <[http://www.cgi.com/files/white-papers/cgi\\_whpr\\_84\\_emerging\\_trends\\_green\\_it\\_e.pdf](http://www.cgi.com/files/white-papers/cgi_whpr_84_emerging_trends_green_it_e.pdf)>.

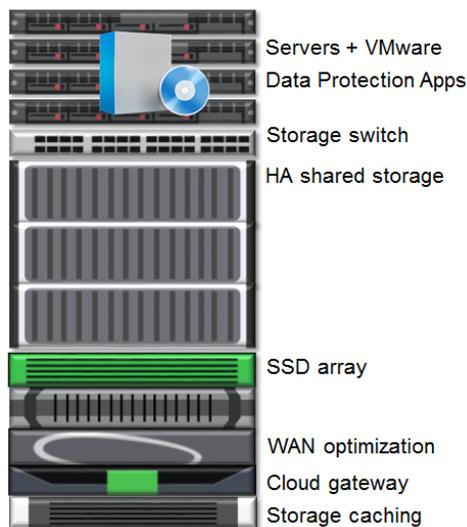
- Increasing transportation costs and travel complexities associated with delivering numerous IT products.
- Stronger regulatory climates at the federal, state, and local levels.<sup>4</sup>

As these matters grow in relevance, so too does the need for analyzing data centers and their current IT infrastructures, with an eye towards determining how to reduce environmental footprint. There is a growing amount of evidence that supports the benefits for technology organizations that optimize their energy and procurement processes, in terms of finances, positive PR, and goodwill. While advancing sustainable practices contribute to social and environmental agendas, enterprises that choose to “go green” are also making sound economic decisions and generate substantial savings as a result.<sup>5</sup>

How is it possible to reduce our environmental footprint when enterprises today require more and more technology in their data centers to battle the Data Problem? And how does SimpliVity help solve this energy problem?

## The Costly Legacy Landscape of IT Infrastructure

Data centers today are marked by a proliferation of appliances and “point solutions” whereby each only addresses a singular problem. Each product is supplied by a different vendor, has a different management screen, a different training curriculum, and physically takes up space in the data center. Combined, we refer to these products as the legacy infrastructure stack.



Research estimates that information and communications technologies are responsible for at least 2% of global greenhouse gas emissions,<sup>6</sup> with data centers accounting for about 1.3%,<sup>7</sup> and data centers in the U.S., specifically, consuming 1.7%-2.2% of the nation’s electricity.<sup>8</sup>

The legacy stack is the culprit. To manage the growing volumes of data, and to perform the necessary functions and capabilities from VM performance to management, mobility and protection—all elements of the Data Problem—IT organizations have been forced to invest in these disparate technologies and the energy costs that come with them.

CIOs know they need to change.

<sup>4</sup> Ibid.

<sup>5</sup> Ibid.

<sup>6</sup> Webb, M., *Smart 2020: Enabling the Low Carbon Economy in the Information Age*, The Climate Group, 2008.

<sup>7</sup> Koomey, J. G., *Growth in Data Center Electricity Use 2005 to 2010*, Analytics Press, 2011.

<sup>8</sup> Ibid.

In fact, Gartner writes, “CIO involvement has been focused on the obvious and significant cost-optimization opportunities gained from improving the energy efficiency of the data center, and, to a lesser extent, the wider distributed IT infrastructure. While best practices in green IT have made rapid progress during the last five years, most IT organizations still have a way to go to catch up.”<sup>9</sup>

Not only are these costs exorbitant, demanding valuable CAPEX and OPEX from data center enterprises, but they also exact a taxing consequence on the efforts towards environmental sustainability.

## SimpliVity’s Innovative Approach to Green IT

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Enter SimpliVity’s OmniCube.

OmniCube is the industry’s first and only globally federated and hyperconverged infrastructure solution that is implemented on our data virtualization platform. Designed and optimized for the increasing advancement towards IT simplification and cost reduction, OmniCube delivers server, storage, and networking services in addition to a complete set of advanced functionalities that enable dramatic improvements to the management, protection, and performance of VMs—all at a fraction of the cost and with an extreme reduction in complexity compared to today’s traditional infrastructure stack.

SimpliVity’s OmniCube delivers the industry’s only truly hyperconverged platform for the software-defined data center that dramatically decreases the environmental impact.

How?

Our hyperconverged platform provides a single software stack that combines the functionality of multiple IT infrastructure products into one shared x86 resource pool.

Why have 8-12 different applications all running and consuming energy when you can implement the OmniCube and manage just one platform for all your tasks?

From a power and cooling perspective, in a typical data center in the United States and Canada, we estimate costs of anywhere from \$25-50 per rack unit (RU) per month (it could be much higher in other parts of the world). OmniCube packs the equivalent of a half- or even full-rack’s worth of legacy gear into a 4U footprint (two OmniCubes at 2U each, in a highly available configuration). That equates to \$100 per month for an OmniCube versus as much as \$1,000-2,000 per month for a 40U rack—and that number could double with certain “Integrated Systems” which do not use standard 24” width and therefore require at least two racks of power and cooling.

Over time, the energy consumption of legacy gear, and therefore the savings that OmniCube provides, really starts to add up.

The Data Virtualization Platform is the core enabling technology within the OmniCube that performs data deduplication, compression, and optimization inline, in real-time, on all data at inception, once and forever, across all phases of the data lifecycle (primary, backup, WAN, archive, and on the cloud), across all tiers within a system (DRAM, Flash/SSD, and HDD), all handled with fine data granularity of just 4KB-8KB.

Our Data Virtualization Platform is what makes OmniCube so powerful. By deduplicating, compressing, and optimizing all data at inception, across the lifecycle, not only are capacity requirements significantly reduced, but energy demands are reduced as well.

With OmniCube, SimpliVity not only lets you transform IT complexity into turn-key simplicity, but is taking the next step by helping IT organizations reduce their environment impact, embrace Green IT and “go green.”

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<sup>9</sup> Gartner. “Predicts 2014: Green IT and Sustainability.” December, 2013.